This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (currently amended) A method of speech encoding of a digital signal processor, comprising:

estimating a zero-phase equalization filter coefficient and a bandpass voicing strengths in a frequency band;

removing linear phase from the zero-phase equalization filter;

setting the phase of the equalization filter coefficient to a zero, wherein the equalization filter coefficient corresponds to a low-voiced harmonics identified by bandpass voicing estimate; and

adding back the linear component to the zero-phase equalization filter.

~~(a) determine bandpass voicing levels for a frame of speech;~~

~~(b) determine a zero-phase equalization filter for said frame wherein harmonics which fall into a band that was determined to have a voicing level below a threshold in step (a) are replaced for said zero-phase equalization filter, wherein the equalization filter is only applied to the harmonics recognized as voice.~~

2. (currently amended) The method of claim 1, wherein~~:~~

~~(a)~~ said ~~determining~~ identified bandpass voicing ~~of step (a)~~ uses the frequency bands 0-500 Hz, 500-1000 Hz, 1000-2000 Hz, 2000-3000 Hz, and 3000-4000 Hz.

3. (newly added) The method of claim 1, wherein the frequency band is a pre-determined frequency band.

4. (newly added) The method of claim 1, wherein the removing of the linear phase comprises waveform shifting by placing an estimated pitch peak at the start of the equalization filter coefficient.

5. (newly added) The method of claim 1, wherein the bandpass voicing estimate is utilized for improving performance of at least one of zero-phase equalization or selective zero-phase equalization.

6. (newly added) An apparatus of speech encoding of a digital signal processor, comprising:

means for estimating a zero-phase equalization filter coefficient and a bandpass voicing strengths in a frequency band;

means for removing linear phase from the zero-phase equalization filter;

means for setting the phase of the equalization filter coefficient to a zero, wherein the equalization filter coefficient corresponds to a low-voiced harmonics identified by bandpass voicing estimate; and

means for adding back the linear component to the zero-phase equalization filter.

7. (newly added) The apparatus of claim 6, wherein said identified bandpass voicing uses the frequency bands 0-500 Hz, 500-1000 Hz, 1000-2000 Hz, 2000-3000 Hz, and 3000-4000 Hz.

8. (newly added) The apparatus of claim 6, wherein the frequency band is a pre-determined frequency band.

9. (newly added) The apparatus of claim 6, wherein the means for the removing of the linear phase shifts a waveform by placing an estimated pitch peak at the start of the equalization filter coefficient.

10. (newly added) The apparatus of claim 6, wherein the bandpass voicing estimate is utilized for improving performance of at least one of zero-phase equalization or selective zero-phase equalization.